THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 15

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Ex parte YEN-JER SHIH and ARTHUR B. PRUIKSMA

Appeal No. 95-2011
Application No. 07/959,011[1]

ON BRIEF

[1] Application for patent filed October 9, 1992. According to appellants, the application is a continuation-in-part of Application 07/628,803, filed December 14, 1990, now U.S. Patent No. 5,177,122, issued January 5, 1993 which is a continuation- in-part of Application 07/389,012 filed August 2, 1989, now abandoned.

Before JOHN D. SMITH, HANLON, and OWENS, Administrative Patent Judges.

HANLON, Administrative Patent Judge.

DECISION ON APPEAL

This is an appeal under 35 U.S.C. § 134 from the final rejection of claims 1-18, all of the claims pending in the application. Claims 1 and 12 are representative of the subject matter on appeal and read as follows:

1. A stable one-part latex composition produced by an aqueous emulsion polymerization method wherein a core-shell polymer is formed, said method comprising:

(a) forming a core polymer by emulsion polymerization, said core polymer comprising:

(1) from 1 to 60% by weight of an epoxy resin, and

(2) from 40 to 99% by weight of at least one ethylenically unsaturated monomer; and

(b) forming a shell polymer on said core by emulsion polymerization of a second monomer composition in the presence of said core, said monomer composition comprising;

(1) from 1 to 99.5% by weight of at least one ethylenically unsaturated monomer; and

(2) from 0.5 to 10% by weight of a hydroxyl or carboxyl functional monomer; providing that said monomers in both said core and shell do not contain amino functional groups and wherein said core-shell polymer comprises from 1 to 80% by weight of the core polymer and from 20 to 99% by weight of the shell polymer; and

(c) post-adding to the formed core-shell polymer composition an effective curing amount of an organic compound containing at least one amino functional

group epoxy polymer which is available for later reaction with said resin upon drying to produce a crosslinked product.

12. A contact adhesive comprising the latex composition of Claim 1 wherein the core-shell polymer has a Tg of -70 to 50EC and an effective tackifying amount of a tackifer.

The references relied upon by the examiner are:

Ting	4,285,847	Aug. 25, 1981
Shih	5,177,122	Jan. 5, 1993[2]

Handbook of Adhesives 437-49 (Irving Skeist ed., 3rd ed. 1990) (hereinafter "Skeist").

The following rejections are at issue in this appeal:

(1) Claims 1-11 are rejected under 35 U.S.C. § 103 as being unpatentable over Ting.

(2) Claims 12-18 are rejected under 35 U.S.C. § 103 as being unpatentable over the combination of Shih and Skeist.

Grouping of claims

According to appellants (Brief, p. 2):

[2]The application which matured into the Shih patent was filed on December 14, 1990 which is the patent's effective date as "prior art" under 35 U.S.C. § 102(e).

> Claims 1 to 11 stand or fall together on the ground of rejection that they are unpatentable over Ting.
>
> Claims 12 to 18 stand or fall together on the ground of rejection that they are unpatentable over Shih in view of Handbook of Adhesives [Skeist].

Therefore, for purposes of this appeal, claims 2-11 stand or fall with the patentability of claim 1, and claims 13-18 stand or fall with the patentability of claim 12. See 37 CFR § 1.192(c)(7).

Claim 1

Claim 1 is rejected under 35 U.S.C. § 103 as being unpatentable over Ting. We reverse this rejection.

Claim 1 is directed to a latex composition comprising a core-shell polymer produced by an aqueous emulsion polymerization method. The core polymer comprises an epoxy resin and at least one ethylenically unsaturated monomer, and the shell polymer comprises at least one ethylenically unsaturated monomer and a hydroxyl or carboxyl functional monomer. An effective curing amount of an organic compound containing at least one amino functional group is post-added to the core-shell polymer composition for later reaction with

the epoxy resin to produce a crosslinked polymer product. According to claim 1, the monomers in both the core and shell do not contain amino functional groups.

Ting discloses a two-stage process for producing graft polymers using the same or similar reactants as recited in claim 1. The examiner correctly points out that claim 1 is a product-by-process claim (Answer, p. 5). Manifestly, the patentability of a product in a product-by-process claim does not depend on its method of production, but rather patentability is based on the product itself. In re Thorpe, 777 F.2d 695, 697-98, 227 USPQ 964, 966 (Fed. Cir. 1985).

Appellants point out (Brief, p. 3):

> It must be noted that while the claims are described in product by process form, they are defined by several structural features which distinguish them from Ting. First, the product claimed is directed to a core-shell polymer where the epoxy is present in the core which is encapsulated by the shell (i.e., shell formed on the core). [Emphasis in original.]

However, according to the examiner (Answer, p. 6):

> Although Ting does not state that the final polymer is a core-shell polymer, Ting uses a two-stage graft polymerization technique which would presumably lead to core-shell polymers. In this connection, Appellants have already acknowledged it is known that *multi-stage graft polymerization* yields core-shell polymers. See page 2, lines 1-11, of the specification. Ting uses multi-stage graft polymerization. Graft polymers are those where poly-(B) are grafted onto the backbone of poly-(A):
>
> AAAAAAAAAAAAAAAAAAA
> * * *
> B B B
> B B B
> B B B.
>
> As such, it would appear that Ting's second stage polymer would also form a sheath around the first stage polymer. . . . In the instant case, Appellants have not met their burden of clearly showing that Ting's polymer would not be a core-shell polymer. [Underlining ours.]

We disagree. The portion of appellants' specification relied upon by the examiner states (p. 2, lines 1-11):

> The term core-shell structure has become well-understood in the art as defining a layered particulate composition having a polymeric center or core surrounded by a shell or overcoat formed of a second polymeric material. Methods for the preparation of such core-shell particulate compositions are well known in the art and include a variety of layered particulate materials having a core and one or more shell layers. For example, U.S. Pat. No. 3,661,994 discloses graft polymers formed by a sequential polymerization process, wherein a rigid, polymeric seed or core is

> surrounded by a graft polymerized rubber layer, and optionally encapsulated with a graft polymerized rigid outer layer. [Emphasis added.]

Thus, it would appear from appellants' characterization of the teachings of U.S. Patent No. 3,661,994 that the graft polymer disclosed therein forms a shell around a separate polymeric core to produce a core-shell polymer as claimed by appellants.

Accordingly, we agree with appellants that Ting is directed to a different product than the claimed invention (Brief, p. 3):

> [The Ting product] does not comprise a core-shell polymer where epoxy resin is present in the core polymer which is encapsulated with a shell polymer, disclosed therein i.e., the shell is formed on the core polymer which contains the epoxy component. In Ting, the epoxy is not in a core as in the core-shell containing product of this invention but is rather dispersed or mixed throughout the composition.

See In re Oetiker, 977 F.2d 1143, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992) (the examiner bears the initial burden of presenting a prima facie case of unpatentability).

Claim 12

Claim 12 is rejected under 35 U.S.C. § 103 as being unpatentable over the combination of Shih and Skeist. We also reverse this rejection.

Claim 12 is directed to a contact adhesive comprising the latex composition of claim 1 and a tackifier. Shih discloses latex compositions prepared by a core-shell multistage polymerization process (col. 1, lines 9-11). The latex compositions disclosed in Shih are useful as laminating adhesives (col. 1, lines 24-31).

According to the examiner (Answer, pp. 7-8):

> Compositionally, the adhesive of Shih's Example 4 differs from that of appealed claim 12 only in that a tackifier is not included. However, Skeist shows that it is well known that acrylic polymers can be used as laminating as well as contact adhesives. . . . Skeist also teaches that contact adhesives require immediate and high bond strength. . . . Further, Skeist teaches that tackifiers may be added to acrylics to achieve high tack. Therefore, it would have been obvious to one of ordinary skill in the art to add a tackifier into the laminating adhesive of Shih's example in order to increase the tack properties thereof, motivated by a reasonable expectation of success.

The examiner's position is not without merit. However, a close examination of Skeist reveals that there is no suggestion to use a core-shell polymer of the type disclosed in Shih as a contact adhesive. We agree with appellants that "neither reference discloses or suggests the particular composition as claimed could be a contact adhesive" (Brief, p. 4). Therefore, there would have been no reason to add a tackifier to the adhesive disclosed in Shih.

In addition, Shih discloses that heat may be used to bond the laminating adhesives to film substrates (col. 13, lines 19-33):

> [T]he adhesive is coated on a film and allowed to dry at room temperature (or dried at moderate heat). The adhesive coated film is then laminated to the desired substrate, for example, a corona treated polyethylene or polypropylene film or other lamina by passing through a "hot nip" roller. The resultant laminate is characterized by the immediate formation of a strong bond which gains strength on room temperature (R.T.) as a result of polymeric hardening and curing.

According to Skeist (p. 443, col. 2):

> **Heat and Pressure Bonding**
>
> With heat-activated bonding techniques, a non-blocking (tack-free) film is applied to one substrate and later reactivated by the application of heat, which produces

> adhesive flow onto the second substrate during a nipping operation, thereby effecting a bond on cooling.

Thus, it would appear that one having ordinary skill in the art would have been discouraged from adding a tackifier to the laminating adhesive disclosed in Shih. See Gillette Co. v. S.C. Johnson & Son, Inc., 919 F.2d 720, 724, 16 USPQ2d 1923, 1927 (Fed. Cir. 1990) (the closest prior art reference "would likely discourage the art worker from attempting the substitution suggested").

The decision of the examiner is reversed.

REVERSED

JOHN D. SMITH Administrative Patent Judge	)	
ADRIENE LEPIANE HANLON Administrative Patent Judge	)	BOARD OF PATENT APPEALS AND INTERFERENCES
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REVERSED

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Draft Final

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